

giving an insight into the formation of synovia by solution of the tissues and the smoothening of the cartilage in a complete joint.—*British and Foreign Medico-Chirurgical Review* from *Virchow's Archiv.*, No. 5, 1855.

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## MATERIA MEDICA AND PHARMACY.

5. *Glycerine as a Nutrient and Alterative.*—Dr. W. LAUDER LINDSAY, in order to test the nutrient properties of glycerine—its power of increasing the weight and improving the vigour of body—used it internally himself, to the extent of two or three teaspoonfuls daily for several weeks. “For the space of a month,” he says, “I took two teaspoonfuls every morning in coffee, which I found to be the most palatable mode of using it. My diet and daily occupations were the same as before I began to take it; my exercise, in consequence of protracted bad weather, rather less than usual. The result was a gain of weight to the extent of  $1\frac{1}{2}$  lbs. at the end of the first fortnight, and of an additional  $\frac{1}{2}$  lb. at the termination of the second—in all, an increase in weight of 2 lbs. On discontinuing the glycerine, my weight gradually fell: and after an interval of six weeks, during which I have not used it, I find myself 1 lb. lighter than before I began to take it daily. It produced no other appreciable effect. I have tried it as a dietetic remedy along with various articles of food, and in divers combinations. It is so readily miscible with fluids of all kinds, that there can be no difficulty in its administration. The pure concentrated glycerine of Price's Company is too pungently sweet to be used alone or undiluted; and I may here remark that, as a general rule, whether for internal administration, or for external application, it ought to be diluted, the degree of dilution being regulated by the practitioner, according to the purpose for which he prescribes it. I have sometimes sweetened coffee with it instead of sugar. Coffee so made, however, has a somewhat peculiar taste, which might prove objectionable to some fastidious stomachs; but when it is sweetened only partially by glycerine, or when glycerine is superadded to ordinary sugar, the beverage is exceedingly pleasant, and quite free from any peculiar flavour or taste. It might be used daily to a considerable extent, when thus mixed with coffee, or chocolate; it is perfectly miscible, and does not betray its presence by floating oil globules or otherwise. In such circumstances, it behaves precisely like a syrup. Tea, to which glycerine has been added in a similar way, is much more apt to be flavoured by it, but the taste is not likely to be regarded generally unpleasant, unless it is added to the extent of two or three teaspoonfuls per cup. It also sweetens milk or cream very pleasantly. A mixture with water is very palatable, and is, undoubtedly, its most ready and cheap mode of administration.

I carefully observed its effects, as a nutrient and alterative, in eight patients—four males and four females—to whom it was given in doses of two or three tea or tablespoonfuls daily, for the space of a month. They were weighed, at intervals, to ascertain their gain or loss of flesh; for I found that apparent physical improvement was not a reliable criterion of real physical growth—that a most marked amelioration in the general health did not always coincide with increased weight of body. All the patients, before taking it, were more or less anaemic, emaciated, and feeble; in all the diet, exercise, and occupations, were otherwise the same. At the end of the month, all of them *appeared* greatly improved in their general condition; they seemed plumper and stronger, and the countenance, in some, was even ruddy. In one case—a female—there was a large and fiery carbuncle over the sacrum, which was opened by crucial incision in the ordinary way; in another case—a male—there was a number of abrasions and ulcerations on different parts of the body, the result of self-mutilation by friction against walls, or by picking with his finger nails. The carbuncle, in the one case, and the ulcers and abrasions in the other, disappeared, or were healed, during the use of the glycerine. I shall

here guard myself against confounding the *propter hoc* with the *post hoc*. A most marked amelioration *followed* the use of the glycerine, and *apparently in consequence of* its use. But further experiments will be necessary to establish the accuracy of the latter statement. The comparative gain and loss in weight will be best set forth in a tabular form. Some of the patients—case No. 3 in particular—were taking little or no ordinary food; and, in these cases, the glycerine would appear to have acted as a substitutional food of an agreeable kind.

PATIENTS.		DURING FIRST FORTNIGHT.		DURING SECOND FORTNIGHT AS CONTRASTED WITH FIRST.		AT THE END OF MONTH.	
Sex.	Age.	Gain.	Loss.	Gain.	Loss.	Gain.	Loss.
No. 1. " 2. " 3. " 4. " 5. " 6. " 7. " 8.	Males . . 50 23 28 28 52 28 30 30	30	... 2 lbs. 8 lbs. neither 5 lbs. ... neither 3 lbs.	2 lbs. 4 lbs. ... neither ... 2 lbs. ... ...	6 lbs. 1 lb. neither 3 lbs. 6 lbs. 2 lbs. 3 lbs. ...	4 lbs. 6 lbs. 7 lbs. neither 2 lbs. ... ... 6 lbs.	... ... ... ... ... 8 lbs. 2 lbs. ...

This table, however, does not fairly exhibit the fattening or strengthening effects of glycerine; inasmuch as, in consequence of all the patients labouring under forms of mental derangement, there were causes constantly in operation, to interfere, or having a tendency to interfere, with the effects of the glycerine, by rapidly reducing the physical strength—such as paroxysms of mania, or fits of melancholia. I should anticipate more favourable results, or at least results more free from fallacy or ambiguity, from experimentation on the patients of a general hospital, or upon patients met with in private practice. I do not think that the fluctuations in the weight, as given in the above table, are greater than can be accounted for by changes in the mental and physical constitution of the patients—changes over which an experimenter has no control. But such experiments are necessarily on too limited a scale, and are too short in their duration, to enable us to arrive thereby at determinative results; they are only mentioned suggestively for the benefit of others who may be inclined, or have opportunity, to pursue the subject. All the patients, above mentioned, took the glycerine readily, with the exception of two, who equally refused food and medicine—the one from a religious belief that it was inherently wrong, and that he could not do so without violating his most solemn vows, and thereby doing irreparable injury to his conscience—the other merely from mischievous obstinacy. It is sometimes possible to persuade insane patients to take medicines, who resolutely refuse food; under such circumstances, the value of cod-liver oil, glycerine, or similar substances, is at once apparent. Should the therapeutical properties of glycerine be fully established, it cannot fail to become a valuable remedy—both in respect to its internal administration and external application—in asylum practice. It has already been tried with some measure of success in the Dumfries, Montrose, and Perth asylums.

With a view to the same object—the discovery of the existence and extent of the fattening effects of glycerine on the animal body, if such there be—I have recently experimented on various of the lower animals, such as fowls, rabbits, and mice, mixing glycerine with their ordinary food. At the same time, I have made comparative or contrastive experiments on the same animals with cod-liver oil, and with common food. For instance, a cock of a cross Cochin-China breed, was fed on bread-refuse, etc., steeped in glycerine (Price's pure concentrated), and a hen of the same kind, on similar food, soaked in cod-liver oil. During the first fortnight of the experiment, the former gained fourteen, while the latter only gained seven ounces.

The following table will illustrate concisely the comparative increase of

weight under ordinary food alone, and in conjunction with glycerine or cod-liver oil. The animals were weighed at intervals of about a fortnight, and were similarly placed in regard to confinement, etc.

NATURE OF FOOD.	ANIMALS.	FORTNIGHTLY WEIGHINGS.				
		1st.	2d.	3d.	4th.	5th.
Glycerine Mixed with daily food	No. 1. Cock	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.
	" 2. Hen	3	3 14	3 11	4 8	5 8
	" 3. } Rabbits	...	3 8	3 12	3 15	4 4
	" 4. }	...	2 15	3 1	3 8	4
Cod-liver oil Mixed with daily food	" 5. Cock	...	2 8	2 11	3 4	3 8
	" 6. Hen	2 12	3 3	3 9	4 4	4 2
Ordinary food alone ..	" 7. } Rabbits	...	2	2 8	2 13	3
	" 8. }	...	1 12	1 15	...	...

The glycerine was greedily licked up by all the animals, which bore every appearance of thriving vigorously under its use. In such experiments, however, it is necessary to bear in mind, or deduct from the results, the influence of confinement or deficient exercise, and of over-feeding, in fattening animals. All the animals under experiment were confined in caged, but roomy, apartments of different kinds, so as to avoid other sources of fallacy. I would suggest the propriety of instituting similar experiments on a larger scale, for the purpose of settling at rest the question, or solving the problem—whether glycerine is really possessed of fattening or nutrient properties; and, if so, to what extent these are available in medicine.

I have given glycerine internally in a variety of affections, in combination with various alteratives and tonics, such as iodine, iodide of potassium, quinia, and iron, or as the basis of expectorant or demulcent mixtures. I have found it to answer extremely well as a solvent or suspending agent, or a vehicle. All the alteratives or tonics which have recently been combined with cod-liver oil, might be administered in a much more agreeable form, if dissolved or suspended in glycerine. Such are iodine and quinia, separately or conjoined; the iodide, lactate and bromide of iron; the proto-iodide, biniiodide and bichloride of mercury; the iodides of arsenic and sulphur; and the valerianate of zinc. By the majority of patients to whom it was given as a nutrient, it was much relished. Indeed, I have been importuned by one person—a female—to prescribe it for her, on the plea that she was of delicate constitution, and that the fat-producing, invigorating properties of the glycerine could not be doubted. This was probably an ingenious deduction from the fact, that some of her companions had been weighed at intervals, during a course of glycerine, and had been found to gain in flesh and plumpness. A similar opinion, in regard to its apparent fattening and strengthening properties, has been expressed to me by others who have observed its effects. Its sweet taste would probably render it a favourite with children, in prescribing for whom it is frequently necessary to consult the caprices of the palate. There are rare exceptions, however, to its general acceptability. A patient of Dr. Stirling's—a man of about sixty, labouring under chronic asthmatic bronchitis—complained, after using it in doses of three teaspoonfuls daily for ten days, that it seriously impaired his appetite, and that he felt as if "filled with oil." It was persevered in for a few days after this sensation was experienced, but it became ultimately necessary to discontinue its use.

The great advantages of glycerine over cod-liver oil, consist in its pleasant sweetness and its freedom from all disagreeable odour; in its ready solubility in, or miscibility with, ordinary fluids; in the absence of the principles, which in animal and vegetable oils, so frequently nauseate and purge; and in its

solvent and other properties, which render it so useful as a vehicle or basis for pharmaceutical preparations."—*Edinburgh Med. Journal*, Sept., 1856.

6. *Proto-iodide of Iron Plaster*.—M. ALQUIE speaks highly of the resolvent power of this plaster in the case of white swelling and lymphatic enlargements. Experiment has shown that its employment is much more satisfactory when made by combining its separate elements with the plaster, than by the introduction of the ready-formed proto-iodide. Take of iodine 1, powdered iron filings 2, and pitch plaster 30 parts. Melt the plaster gently, and add the filings, and then the iodine, previously dissolved in 10 parts of alcohol, stirring well with an iron spatula, until a greenish-brown colour is produced. It is then spread and cut into strips for application.—*Med. Times and Gaz.*, Oct. 25, 1856 from *Bull. de Thérap.*, tome 1. p. 503.

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## MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

7. *The Nature of Phthisis, and particularly of the Pretubercular Stage*.—Dr. EDWARD SMITH read a very interesting paper on this subject before the Medical Society of London (Oct. 25th, 1856). After pointing out the advantages of special hospitals in the study of diseases, the object of the author was to show, 1st. That the treatment of phthisis, in order to be commonly successful, must be in the pretubercular stage. 2d. That there is a pretubercular stage, which is capable of easy demonstration, and in which treatment would commonly prevent the deposition of tubercle. And 3d. That the nature of phthisis essentially consists in a lessened inspiratory action of the air-cells of the lung. He admitted that phthisis was induced by a multitude of causes, but he affirmed that the tendency of all those is towards exhaustion, and that they, although many, have one common mode of action in inducing the disease. He criticized minutely the prevalent opinion that phthisis is a disease of blood, and proved that whatever may be the state of the blood in the disease, there is no universal condition of it which attends the origin of the disease, or which is really causative of it. The state of the system, which is one of the causes of phthisis is one of both solids and fluids, and is to be expressed rather by a general predisposition to the disease than by a specific state of a part of the system, viz., the blood, in which the elements of the disease had never been found, nor had been directly transmitted to another system. He also proved, from his own investigations, that the functions of alimentation were not at fault as causative of phthisis, by showing that the quantity of food taken in the early stage is equal to that in health: and by a reference to the feces, solids in the urine, biliary and cuticular excretions, he showed that there was no larger excretory waste than occurs in health. The lessened action of the air-cells he proved from the lessened vital capacity, feeble inspiratory power, and lessened mobility in the earliest stage of the disease; the consequent lessened vesicular murmur, harshness of respiration, and flattening of the chest, with slight dulness, indicative of atrophy of the lung. He also proved that the signs of lessened vesicular action are found in all those cases which, by common consent, are said to be prone to phthisis, and mentioned instances in his own practice at the hospital in which the vital capacity was reduced to two-thirds or one-half of the normal quantity, without there being any evidence of the deposit of solid material in the lung. This stage of lessened vesicular inspiratory action without any evidence of tubercular deposition, he designated as the first stage of the disease, and is one in which every hope of success may be entertained from suitable treatment. The second stage was that of tubercular deposition, and the third that of destruction of tissue, whether to the extent of softening only, or to the further degree of the formation of a cavity. He then proceeded to show the connection between the act of inspiration, and